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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ROE, JESSEE RANDALL	
ART UNIT	PAPER NUMBER
1742	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/765,373	GILLETTE ET AL.	
	Examiner	Art Unit	
	Jessee Roe	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) *26-37* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11, 19-25* is/are rejected.

7)☒ Claim(s) *8,12-18 and 25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 January 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6 May 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims Status

Claims 1-25 are currently under examination. Claims 26-37 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected case hardening method, there being no allowable generic or linking claim. Election was made without traverse in the reply filed on 27 October 2006. Applicant's election of a case hardening apparatus without traverse for claims 1-25 in the reply filed on 27 October 2006 is acknowledged.

Specification

The abstract of the disclosure is objected to because it exceeds 150 words in length. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities: "to force" should be deleted from [0007], "khz" should be replaced with "kHz" in [0030], "kw" should be replaced with "kW" in [0030], and "Fig. 5" should be replaced by "Fig. 6" in [0033] and [0035]. Appropriate correction is required.

Drawings

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings are informal and the numerals within the drawings are difficult to read because they are in gray regions. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are

required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Objections

Claims 8, 17 and 25 are objected to because of the following informalities: "radially inwardly" should be replaced by "radially inward". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9, 11-18 and 23 are rejected under 35 U.S.C. 112, 2nd paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites the limitation "said ring proximal vertex". There is insufficient antecedent basis for this limitation in the claim.

Claims 11 and 23 recite the limitation "said ring proximal said vertex". There is insufficient antecedent basis for this limitation in the claim.

Claims 12-18 are rejected because they depend from base claim 11.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 3-6 are rejected under 35 U.S.C. 102(b) as being anticipated by West (US 4,628,167).

In regards to claim 1, West ('167) discloses an apparatus for hardening a workpiece (abstract). This apparatus would be comprised of a ring of conductive material having an inner diameter and an outer diameter and opposing planar sides (See Figure 6 and col. 7, lines 40-68). An insulator (dielectric) material would be fixed to one side of the conductive ring. An insulator (dielectric) material would also be fixed to the other side of the conductive ring (See Figure 6 and col. 7, lines 40-68).

In regards to claim 3, West ('167) discloses an apparatus for hardening a workpiece with a ring with quenching holes that would extend into the dielectric material (See Figure 5 and col. 7, lines 1-30).

In regards to claim 4, West ('167) does not specify that the insulator (dielectric) material on one side of the conductive ring would be different than the insulator (dielectric) on the opposite side of the ring. Therefore, it would be inherent that the insulators would be made of the same insulating material. See MPEP 2112 IV.

In regards to claim 5, West ('167) discloses that the ring of conductive material would be made of a copper metal. (col. 6, lines 45-68).

In regards to claim 6, West ('167) discloses conductive teeth that would extend radially from the inner diameter of the teeth of the ring (See Figure 6).

Claims 1 and 4-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Batz et al. (US 6,939,448).

In regards to claims 1 and 4-5, Batz et al. ('448) disclose an apparatus for hardening workpieces by electroplating metals such as platinum on the surfaces (col. 12, lines 45-65 and Figure 10). The platinum ring would be displaced between two dielectric materials (col. 12, lines 45-65 and Figure 10). The dielectric material would be made of the same Teflon dielectric material (col. 8, lines 31-66).

In regards to claims 6, Batz et al. ('448) disclose an apparatus for hardening workpieces by electroplating metals such as platinum on the surfaces (col. 12, lines 45-65). A plurality of teeth extend radially from the inner diameter of the ring and there would be a slot that would extend radially inward (See Figures 8-9).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over West (US 4,628,167).

In regards to claim 2, West ('167) discloses an apparatus for hardening a workpiece (abstract) as shown above, but West ('167) does not specify a cooling jacket. However, West ('167) does specify that this apparatus is comprised of multiple quenching tubes that would be next to and would pass through the dielectric materials (See Figure 6 and col. 8, lines 35-68). Having the tube within the dielectric frame would allow most of the energy from the coolant to be stored within the dielectric frame and transferred to the workpiece thereby forming the equivalent of a cooling jacket. See MPEP 2144.06.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over West (US 4,628,167) in view of Trager (US 3,288,699).

In regards to claims 7 and 8, West ('167) discloses an apparatus for hardening a workpiece as shown above, but West ('167) does not specify that a slot formed from the conductive material would extend radially toward the tip of the teeth.

Trager ('044) discloses a slot formed on the conductive material that would extend radially toward the tip of one of the teeth (col. 3, lines 50-66). This slot allows a workpiece to be rotated at a predetermined rate when vertically displaced (col. 3, lines 50-66).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to put a slot in the conductive material as disclosed by Trager ('044) on the apparatus for hardening a workpiece, as disclosed by West ('167), in order to rotate a workpiece at a predetermined rate when vertically displaced, as disclosed by Trager ('044) (col. 3, lines 50-66).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Batz et al. (US 6,939,448).

In regards to claim 10, Batz et al. ('448) disclose an apparatus for hardening workpieces by electroplating metals such as platinum on the surfaces (col. 12, lines 45-65). Batz et al. ('448) also disclose that the gaps around the conductive material would be 0.10-0.30 inches tall (col. 7, lines 7-46 and Figure 3). Therefore, it would be expected that the height (thickness) of the teeth portion would be at most 0.30 inches tall, which overlaps with the claimed invention and establishes a prima facie case of obviousness. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the desired conductive material thickness from the conductive material thickness of Batz et al. ('448) because Batz et al. ('448) disclose the same utility throughout the whole disclosed range.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Batz et al. (US 6,939,448) in view of Trager (US 3,288,699).

In regards to claims 7 and 8, Batz et al. ('448) discloses an apparatus for hardening a workpiece as shown above, but Batz et al. ('448) do not specify that a slot formed from the conductive material would extend radially toward the tip of the teeth.

Trager ('044) discloses a slot formed on the conductive material that would extend radially toward the tip of one of the teeth (col. 3, lines 50-66). This slot allows a workpiece to be rotated at a predetermined rate when vertically displaced (col. 3, lines 50-66).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to put a slot in the conductive material as disclosed by Trager ('044) on the apparatus for hardening a workpiece, as disclosed by Batz et al. ('448), in order to rotate a workpiece at a predetermined rate when vertically displaced, as disclosed by Trager ('044) (col. 3, lines 50-66).

Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over West ((US 4,628,167) in view of Trager (US 3,288,699).

In regards to claim 19, West ('167) discloses an apparatus for hardening a workpiece (abstract). This apparatus would be comprised of a ring of conductive material having an inner diameter and an outer diameter and opposing planar sides (See Figure 6 and col. 7, lines 40-68). There would be a plurality of conductive teeth extending radially from the inner diameter (See Figure 5).

West ('167) discloses an apparatus as shown above, but West ('167) does not specify that the slot formed from the conductive material would extend radially toward the tip of one of the teeth.

Trager ('044) discloses a slot formed on the conductive material that would extend radially toward the tip of one of the teeth (col. 3, lines 50-66). This slot allows a workpiece to be rotated at a predetermined rate when vertically displaced (col. 3, lines 50-66).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to put a slot in the conductive material as disclosed by

Trager ('044) on the apparatus for hardening a workpiece, as disclosed by West ('167), in order to rotate a workpiece at a predetermined rate when vertically displaced, as disclosed by Trager ('044) (col. 3, lines 50-66).

In regards to claim 20-21, West ('167) discloses an apparatus for hardening a workpiece (abstract) as shown above, but West ('167) does not specify a cooling jacket. However, West ('167) does specify that this apparatus is comprised of multiple quenching tubes that would be next to and would pass through the dielectric materials (See Figure 6 and col. 8, lines 35-68). An insulator (dielectric) material would be fixed to one side of the conductive ring. An insulator (dielectric) material would also be fixed to the other side of the conductive ring (See Figure 6 and col. 7, lines 40-68). Having the tube within the dielectric frame would allow most of the energy from the coolant to be stored within the dielectric frame and transferred to the workpiece thereby forming the equivalent of a cooling jacket. See MPEP 2144.06.

In regards to claim 22, West ('167) discloses that the ring of conductive material would be made of a copper metal. (col. 6, lines 45-68).

Claims 19, 22 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Batz et al. (US 6,939,448) in view of Trager (US 3,288,699).

In regards to claims 19 and 25, Batz et al. ('448) disclose an apparatus for hardening workpieces by electroplating metals such as platinum on the surfaces (col. 12, lines 45-65 and Figure 10). A ring of conductive material having would be displaced between two dielectric materials (col. 12, lines 45-65 and Figure 10). The dielectric material would be made of the same Teflon dielectric material (col. 8, lines 31-66). A

plurality of teeth extend radially from the inner diameter of the ring and there would be a slot that would extend radially inward (See Figures 8-9).

Batz et al. ('448) disclose an apparatus as shown above, but Batz et al. ('448) does not specify that the slot formed from the conductive material would extend radially toward the tip of one of the teeth.

Trager ('044) discloses a slot formed on the conductive material that would extend radially toward the tip of one of the teeth (col. 3, lines 50-66). This slot allows a workpiece to be rotated at a predetermined rate when vertically displaced (col. 3, lines 50-66).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to put a slot in the conductive material as disclosed by Trager ('044) on the apparatus for hardening a workpiece, as disclosed by Batz et al. ('448), in order to rotate a workpiece at a predetermined rate when vertically displaced, as disclosed by Trager ('044) (col. 3, lines 50-66).

In regards to claim 22, Batz et al. ('448) disclose an apparatus for hardening workpieces by electroplating metals such as platinum on the surfaces (col. 12, lines 45-65 and Figure 10). The platinum ring would be displaced between two dielectric materials (col. 12, lines 45-65 and Figure 10).

In regards to claim 24, Batz et al. ('448) disclose an apparatus for hardening workpieces by electroplating metals such as platinum on the surfaces (col. 12, lines 45-65). Batz et al. ('448) do not specify the claimed thickness of the conductive material. However, Batz et al. ('448) also disclose that the gaps around the conductive material

would be 0.10-0.30 inches tall and based on Figure 3, the teeth and the gap size are very similar in size (col. 7, lines 7-46 and Figure 3). Therefore, it would be expected that the height (thickness) of the teeth portion would be at most 0.30 inches tall, which overlaps with the claimed invention and establishes a prima facie case of obviousness. See MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the desired conductive material thickness from the conductive material thickness of Batz et al. ('448) because Batz et al. ('448) disclose the same utility throughout the whole disclosed range.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571) 272-5938. The examiner can normally be reached on Monday-Friday 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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